

There being no other nominations, the chair called for the vote. Michele Tuchner was elected secretary/treasurer on a voice vote.

Pott then summarized the purpose of forming this committee. He briefly reviewed the kick-off meeting minutes and discussed the history of the 700 MHz band. He explained that Wisconsin is currently in the planning stage for 700 MHz. At this time there has been nothing available about the status of the remaining adjacent states, North Dakota, South Dakota, and Iowa. It will be required for us to get concurrence from our neighboring states before implementation of a Minnesota plan.

Roger Kochevar was called upon to discuss frequency issues. He said he would prepare background material for presentation at the next meeting. He indicated that NIJ will set up a data base. The challenge will be to figure out how to sort frequencies with Wisconsin.

There are many various technologies and they have various slots available of varying bandwidths. The feds want each region to fill in the slots and then they will determine how to sort them. Frequency coordinators will have to sort this out. They will get some help from the National Coordinating Committee. The NCC will provide some guidelines and we should have these within the next couple months. The 700 MHz plan needs to be completed within the next 3-4 years.

Pott asked those present what the goals of their individual agencies were. King Fung said that Hennepin County will need frequencies for their CAD/MDT system soon, and indicated he hoped the process could proceed more quickly. Gary Fried said that Goodhue County has a bottleneck involving capacity. A suggestion was made to survey agencies to get a grasp on what each agency's needs and wants. The discussion then turned to the survey completed by Mike Hogan, Mn/ DOT, on the 800 MHz statewide rollout plan. Copies were distributed to those who wanted them.

There then followed a discussion on what funding might be available to this committee. Pott indicated there is \$2500 available, broken down as follows: \$300 for meeting notices and start up costs, \$1400 for regional planning preparation (probably for printing copies of the final plan) and \$800 for training. It was suggested that we might want to hire a consultant. If we did this we would need to come up with a funding source. There were questions about the possibility of obtaining funds from APCO or the Metropolitan Radio Board. The conclusion is that as it now stands this is basically an unfunded project.

The discussion then turned to a sub-committee structure. It was generally decided to create the following sub-committees: Education and Outreach, which Bill Dean offered to chair; An Operations subcommittee, and a Technical subcommittee.

Steve Pott announced that he would try to obtain some reference material for the next meeting. Attendees were also advised there is much information available on the World Wide Web at www.fcc.gov.wtb.

There was no other new business. The meeting was adjourned at approximately 3:50 p.m.

Region 22 700 MHz Planning Committee
Mankato Convention Center

Meeting Minutes of 4-11-01

Attendees: Andy Terry, MN DOT; Roger Kochevar, MN DOT; Bill Dean, Metro Radio Board; King Fung, HCSO; Michele Tuchner, MN State Patrol; Jerry Huettl, Mankato DPS/Blue Earth County; Ron Whitehead, Bloomington PD; Steve Pott, Washington County; Dan Gelle, Gold Cross Ambulance; Bob Vandebroek, Carver County; Bob Meschke, Martin County.

I. Call to Order

Chair, Steve Pott called the meeting to order at 10:20 a.m.

Meeting Summary:

Pott distributed an agenda and copies of the new by-Laws. These by-laws were re-written by Pott to reflect the changes discussed at the last meeting. Andy Terry moved to accept the by-laws, the motion passed.

Andy Terry and Roger Kochevar led a discussion on what to do with the 700 MHz channels. They explained the need to develop a work plan and to decide how this block of frequencies will be assigned. The National Coordinating Committee will work with the frequency coordinator (Roger Kochevar) to provide some direction. Roger Kochevar has the most expertise on this, as he was involved with spectrum allocation for 800 MHz. Roger Kochevar discussed different philosophies for frequency allocation such as pooling vs assigning as requested. One disadvantage of pooling is that you don't get as efficient of a pack, eventually some agency would be left without channels. An advantage to pooling is that the people that have the money to build can get what they need. However then some agencies may hold on to them and never do anything with them and if another agency wants them and needs them they can't get them. Kochevar suggested that we could mix and assign some, and save some, maybe 10%. Or we could assign in some areas and pool in others.

Roger Kochevar, King Fung and Andy Terry talked with National Coordinating Committee. They drew up a handout that compares how much 700 spectrum we have with what we got with the 800 NPSAC. Channel centers and separation have not been finalized yet with 700 MHz.

Pott questioned if we could assign the 700MHz channels like we did the 800 MHz channels. Kochevar explained the method used in assigning channels in our 800 spectrum. If we followed the same model we used with 800, we would have to have more geographic distance between users. Pott commented that he realized that this may be more difficult, but it seems as though we have been able to overcome the frequency overlap in the metro.

Then there was discussion on what user's needs were and whether 700 MHz would be able to meet their needs. The question was asked if 50 KHz would be enough bandwidth for pushing data. It was suggested that to push video one would need to aggregate maybe three 50 KHz channels. It was brought up that many agencies are considering going to CDPD, these users may be looking at 700 MHz as an alternative to meet their needs.

Whitehead raised the concern that in the next five to ten years users will be looking for a new system because what they have won't be enough. Kochevar said that most VHF users will eventually migrate to narrow band use because the equipment will be available, and there will be less interference. And, if a user goes to narrow band they will be able to get more channels from narrow band.

Roger Kochevar then handed out a draft of a general channel assignment plan for 700 MHz.

He listed five criteria needed for frequency assignment. First, determine the channel total to be assigned or left in an unassigned pool for future use. Second, define the service area. (Mobile coverage vs. Portable coverage). Third, define the interference criteria [Narrowband and Wideband (co-channel and adjacent channel)]. Fourth, what RF coverage model to use (Longely-Rice, Okumura, Bullington). Fifth, define the non-technical criteria for assigning channels possible non-technical criteria: 1) population, 2) eligible political entities such as, counties, cities, major cities, 3) area of political entities, 4) adjacent state considerations.

A presentation by David Eierman, Senior Staff Engineer with Motorola on the National Coordinating Committees 700 MHz transition plan followed. Dave presented a wealth of information about the national process, and the status of other regional planning processes. A copy of his Power Point presentation is available from Michele Tuchner at Michele.Tuchner@state.mn.us

Following the presentation, we discussed the channel allocation again. There was discussion about the NPSPAC process and how it might have gone differently if it was done today, with more information about the technology that is available. We decided that resolving this issue is the core of our process, and we need to meet in the near future to discuss it further.

Mn/DOT discussed their intent to apply for the 700 channels designated as Statewide channels. Pott pointed out that if the State chose not to license them, they would become part of the regional planning process. Terry felt it was best to move ahead with the licensing process at this point.

There was discussion about funding available for the regional planning process. \$2500 is available. Bill Dean thought we should apply for the money now, and use it as necessary. Pott was reluctant to apply for the money until after costs

were incurred, to simplify the accounting and reporting requirements. No action taken at this time.

There was discussion about developing a work group to deal with the frequency allocation issue. Pott thought that it would be difficult to identify a work group when the entire Regional Planning Group has such an open structure. It was decided that additional meetings will be called between the quarterly meetings, consistent with the by-laws, but significant decisions will be held for the quarterly meetings.

Andy Terry offered Mn/DOT's video-conferencing equipment for future meetings. This would allow the meeting to be held at all Mn/DOT district offices throughout the State.

Adjourned at 1332 hours.

Region 22 700 MHz Planning Committee

Video Conference

Meeting Minutes of 7-11-01

1010 Andy Terry did roll call, of remote sites, Rochester only site in addition to Mn/ DOT Central Office.

Attendees: Gary Fried, Goodhue County; Roger Hand, Red Wing Public Safety; Blaine Hentz, Wabasha County; Ron Whitehead, Bloomington PD; Roger Kochevar, Mn/DOT; Andy Terry, Mn/DOT; Steve Pott, Washington County; Michele Tuchner, MN State Patrol; Mark Hopie, Blue Wing and City of St. Cloud; Jerry Huetel, Mankato DPS/Blue Earth County.

Pott lead off with introductions. Apologized for not getting agenda out. Pott requested any items to be added to agenda. Request to discuss funding of new technology.

Andy Terry discussed the purpose of the meetings, planning 700 frequencies, separate from partnership that is going on with Olmstead County. Pott advised that some of the questions would probably get answered as we discuss what 700 can do and what 800 can do.

Roger Kochevar placed copy of honeycomb map on display. The handout showed one possible scenario for distribution of channels, similar to cellular company strategy. There are 3 categories of channels for public safety in the 700 MHz band that we need to deal with - state channels, local channels, and data channels. There are ninety-six 12 1/2 kHz state channels. Mn/DOT has applied for these licenses. These can be used anywhere in the state. They have to be coordinated with adjacent states.

Jerry Huetel asked are the state frequencies reserved only for state use? No.

Hopie asked the bandwidth of the state channels. Kochevar said that there is still discussion, but it appears the thought is that they should be 12 1/2 kHz.

Roger then discussed the 154 local channels. These are likely to be 25 kHz bandwidth, to accommodate different technologies.

The 3rd category is data channels. They are wideband, 50 kHz, and can be aggregated, up to 150 kHz. This seems to be the future in data communications. Right now we're limited to 25 kHz, so having 50 kHz, will be a significant change. Roger couldn't recall the number of channels available, but there are many available for allocation.

A document showing the FCC channel allocation plan was placed on display. The NCC is coordinating the allocation of these channels. They left some

channels open for future allocation for other technologies, and for guard channels to protect the public safety channels from interference. FCC has adopted Project 25 (APCO) as the digital standard to be used for the interoperability channels.

Kochevar explained that we have some experience with the NPSPAC plan, and we are trying to improve on that plan. We're exploring a cellular approach to the 154 local channels. We did this with the 96 state channels. Pointing to the cell map, he explained that they intend to use a cellular pattern of eight clusters. Each cell is a 12 1/2-mile radius. We thought we'd take the 154 channels and group them into 19 channels per group or 8 groups of 19. We've struggled with the size of the cells. Our coverage is based on 330 ft above average terrain, antenna. For the coverage analysis, the power level used was 35-watt mobiles, and 3-watt portables. We get 95 % coverage (outdoors on the belt) with 330 ft above terrain height antenna. The tradeoffs are if you make the cell larger, you get wider coverage, but you can't reuse the group again for many miles. If you make cell too small, it can't be made useable with the technology we have today. We're trying to balance the cell size based on current technology and future technology.

Pott said we talked about the design of this in the higher populated areas, how about the rest of the State? Roger responded that they started to look at this cell concept for the local channels, but when we start the allocations we thought we'd do it by population, the higher population would have the most channels, because they have the most need. We are going to use all 154 in metro, and then reuse them out-state.

The ground rules used for this idea were:

- 1) Channel pairs allocated in an 8-cell pattern. Cells have 12.5 mile radius
- 2) Service area is determined by cell boundaries, that means we would restrict coverage to the cell boundaries or somewhat past the boundaries, but we'll have to decide how to do that
- 3) Adjacent channel cell allocations are protected by criteria to be developed by the NCC.
- 4) Frequency allocation for cells split by political boundaries may be done on an area basis. For example, if a cell has 19 channels and the cell lays 70% in County A and 30% in County B, County A would get 70% of the channels. Or it could be done on a population basis. For example, if the cell was split 70% and 30%, but the population in each of those areas was the same, the channels would be split equally.

Another model that could be used is the NPSPAC model, but the cellular model would use the channels more efficiently.

The cellular plan is gaining the attention of states surrounding Minnesota. That will help with the coordination process in adjacent states, and may help with some "edge site" issues.

Pott asked how many more frequencies does the metro area need? The metro counties have already benefited from being the largest population area. They already have a system built. Is it a good idea to use that model again? They need more channels to support the system in the future, but it should be a smaller number than the NPSPAC allocation.

Pott suggested that maybe we need to ask how many frequencies everyone needs, instead of giving channels based only on population. Maybe assign based on how many everyone needs. (i.e. Bloomington may need 12 and Hennepin Co, may not need all 19 because they could use the 800 channels that Bloomington may not need any longer).

Since Washington County and Dakota County don't have any 800 MHz channels, do you give them more 700 channels, rather than trying to find 800 channels that will work, and leave those for the metro system? Maybe we should develop a formula on how to assign rather than base it on population base or square miles, so that we can best meet everyone's needs.

Andy Terry stated that maybe we do the opposite of NPSPAC, because the metro area got more NSPAC, maybe the collar counties should get more 700 MHz frequencies?

Roger stated that, politically, it might be hard to do it that way.

Ron Whitehead commented that Bloomington is experiencing conflicts with Nextel, and their 800 channels, so maybe they would want 700 MHz, to eliminate conflicts. Pott said maybe they would consider relinquishing their 806 channels in return for a larger number of 700 MHz channels. That may be a better option for the metro system also rather than dealing with 700 MHz channels as part of the established 800 MHz system.

Terry said we talked about leaving some in a pool, for those who come to us with a need.

These could be allocated on a first come first serve basis.

Hopie asked if MN DOT would be willing to develop an RF coverage plan and frequency assignment plan, to better evaluate the issue. Mn/DOT agreed.

Pott expressed concern about sorting the channels assuming 25 KHz bandwidth. One 25 KHz channel cannot be used as two 12 ½ KHz channels using the metro system technology. We would get nearly twice as many useable channels if 12 ½ KHz bandwidth were used.

There was discussion about the impact of the cellular approach on countywide coverage. Simulcast is currently used to cover larger geographical areas. It may take as many as 68 channels in a multicast system to accomplish the same loading as 8 or 9 simulcast channels.

Roger agreed this is a major issue; do we want everyone to do simulcast within his or her county?

Andy Terry suggested that the new concept that was introduced today might be a dual standard, one for metro and another for greater MN. Maybe we need to be more flexible and assign some and leave some pooled. At some point we need to submit a plan, but we can modify the plan in the future.

There was discussion about the coverage analysis assuming 330 feet above average terrain. Tower space and construction is getting more difficult. This may not be possible in many areas.

Roger said that their experience with the 800 system is that in building coverage is comparable to VHF. Ron Whitehead from Bloomington said that their in building coverage with 800 MHz hasn't been as good as they would like.

Ron Whitehead: There is some potential that you can center the pattern differently, as you get out-state, this maps seems to suggest this pattern once set must be repeated as is. As you get to the less populated areas, could you re-center some of these cells? There was discussion about the number of channels needed outside of the metro area. Roger said that only about 5 licenses have been issued on the 205 NPSPAC channels anywhere in the State.

Andy Terry asked about coordinating the 700 Planning meeting with the NPSPAC meeting. He said that he needs to hold a meeting, and thought it would boost attendance if it were held the same time and location as the 700 meeting. He thought he would try to set a meeting prior to the October 700 MHz planning meeting.

Pott polled the group about the use of the videoconferencing. They felt it was acceptable, but it would be good to have the same handouts at all locations, rather than trying to look at them on a television screen.

Adjourned at 12:38 pm.

Region 22 700 MHz Planning Meeting
Kelly Inn

Meeting Minutes of 10-10-01

Attendees: Steve Pott, Roger Kochevar, John Gunderson, Kim Kallestad, Mark Hoppe, Bob Schnese (Motorola), Andy Terry, Michele Tuchner.

Called meeting to order at 1015 hrs. 8 people in attendance - not enough for a quorum.

Steve Pott had discussion with Bill Dean from the Metro Radio Board. He, and others, is unavailable for the 700 MHz meetings due to their regularly scheduled System Managers Group meeting. They would appreciate consideration of a change in the meeting dates. Those in attendance felt that a change to the second Tuesday of the quarter, rather than the second Wednesday, would work. The quarterly meetings are scheduled in the by-laws, and cannot be changed without proper notice, and a larger group of voting members. Will put the issue on the upcoming agenda.

Andy Terry suggested another change in wording for the by-laws similar to what is being considered for the NPSPAC Committee. The wording is still being developed but it basically allows business to be conducted even if a quorum is not present. Any action taken at the meeting becomes effective after the minutes are distributed and an amount of time for comment/objection has passed.

The initial sort of the 700 MHz frequencies is scheduled to be done prior to the April meeting. That may generate enough interest and participation in the meeting to make these by-law changes.

Steve Pott talked about the NIJ funding that is available, and whether we wanted to spend it before the end of the year, or lose it. Discussion about whether the funds could be used to attend the NCC meeting (Terry), or PSWN (Pott) meeting. Terry suggested spending dollars on printing of final report. Kochevar thinks we will need to send someone to NIJ training, after the sort is done. The feeling of the group was that training and publishing costs were more appropriate than a conference or meeting. (NOTE: Steve Pott received an e-mail message from Mark Hoppe following the meeting and he had learned that the NIJ funding does not go away, and then renew at the end of the year. Mark spoke with the National Law Enforcement and Corrections Technology Center in Colorado, the agency managing the funds. They were surprised that we hadn't applied for the money yet, and recommended that we do so. We had discussed applying for the money at an earlier meeting and decided not to, at that time. Steve Pott will discuss with Andy Terry and Michele Tuchner to determine who will act as the fiscal agent, and we will apply for the money if we can make the proper arrangements.)

Discussed the formation of the work group, and the meeting schedule. The intent is to meet once each month on the second Wednesday of every month, at 10:00am at the Kelly Inn, 10th floor. The purpose of the meeting is to develop discussion points to help make the quarterly meetings more productive.

Roger Kochevar discussed the sort criteria that will be used by NPSTC (National Public Safety Telecommunications Council). The sort will be similar to the NPSPAC sort of the 800 MHz frequencies - by County and major cities in 25 KHz blocks. There was discussion about the possibility and process for modifying the sort. If changes are going to be made in the Metro area, or along any other border, modifications will need to be coordinated with neighboring states.

We discussed the possibility of asking the FCC for definite date when the 700 MHz channels will be available. Canadian TV Channels are still an issue for northern Minnesota. If a date is announced, vendors might be more motivated to develop equipment.

There was discussion about how we will organize and write the 700 MHz plan. NCC has written a comprehensive draft. Final draft guidelines for 700 MHz are available on the NPSTC website (NPSTC.org). We could also get a head start by developing concepts on how we may want to modify the sort. NYSTEC (NYSTEC.com) has published the criteria that will be used to perform the sort. One criterion that will be considered is need. There was discussion about how need could be determined on a national basis.

One of the technical parameters that will be used is a much more conservative interference model. Compared to the 800 MHz NPSPAC plan, this interference model will re-use the frequencies at a greater distance.

Mark Hoppe asked how they are going to address terrain. Kochevar wasn't sure terrain would be an issue in our state, not mountainous. Mark Hoppe advised that it appears they pick the highest point in your area.

Terry asked how much flexibility we have to modify the sort; are there restrictions? Mark Hoppe felt that it was negotiable if we didn't affect the other regions. Pott reiterated that as we discussed at work group meeting, we agreed with Mark Hoppe, we should be able to make modifications if it didn't interfere with other regions.

The discussion turned to the list of discussion points that was developed for the meeting. These are not listed in order of importance or priority, they were simply recorded during the work group meeting in the order they were discussed.

1. *The RPC must have a working understanding of the criteria for the 700 MHz Pre-allotment process.*

Develop a document discussing, in non-technical terms, the entire process. Provide a summary of the NYSTEC process. If this is properly written and formatted, it can be part of the final plan. Questions to be addressed include: What is the sort criteria? How will NYSTEC determine needs? How will terrain be considered in the sort process? What is the feedback process for the RPC to provide input/modifications to the sort? What training is available? What is the process for modifying the original sort?

Kim Kallestad asked how much of this process is repetitive from the 800 MHz; could we get some guidance from 800 group? Roger Kochevar thought it would be good to have an informational document on 800 MHz, NPSPAC, but we were unsure if that had been done. We will look into that group as a resource.

2. *The RPC should develop a process, which will achieve maximum utilization of a channel within a county. The RPC should take an active role in that process.*

Channels will be allocated for use by eligible users within a County. Assignment within the county can be left up to the county or done by the RPC. There was discussion about the allocation process within a county. Relationships between officials of eligible user agencies vary from county to county. The RPC should develop a documented process so all users have a chance. There was a good deal of discussion about a tiered approach to the allocation. Everyone in attendance agreed that the channels should be used within a specific period of time or re-allocated to another eligible user. One suggestion was that we leave it up to the counties to resolve issues within their boundaries, and if they can't reach an agreement they can appeal to the RPC, then the FCC. The RPC should take responsibility for the issues that develop as a result of the plan. Mark Hoppe said that we might want a two-step process, first show need, and then show utilization.

3. *The plan should have sufficient flexibility so those counties can pool their channels for a regional system.*

Andy Terry felt no one would object to that as long as it doesn't impact anyone outside the boundaries of the joint system. If you are going to cause interference, you could still possibly do it with a waiver (concurrence) from the agency impacted. Steve Pott felt it is important to define a shared or regional system. Andy Terry felt Washington County's current system is a shared system, to become a regional system; it would include wider multiple counties use. One way to determine allocation may be to consider distribution by PSAP. Steve Pott suggested three different definitions - shared, multi-county, or regional systems.

4. *Channel loading should not be used for channel allotment because there are better methods available. RPC should develop a multiple factor weighting scale. Then assign channels by a predetermined formula.*

Developing a formula that considers many factors will be very difficult. Consideration could be given to busiest time based on different categories of users, police (night), city use (day), or fire (anytime). Discussed the 100 units per channel assignment formula. Mark Hoppe pointed out that technology would also drive the number of channels needed. Some technologies do not allow simulcast, so if you have 3 sites, you need three channels. Does simulcast mean more efficient use of the frequencies? Can we limit technology by making that a requirement? Should we make it a requirement? Mark Hoppe said that 6.25 KHz technology cannot use simulcast. Some attending the work group meeting had thoughts about a formula; we will discuss further at the work group, and bring back to the group.

5. *Users should be treated basically equal. No user should be considered more noble than another.*
6. *The members of equal treatment of users should be left up to the counties rather than the RPC.*

Discussion of #5 & #6 were combined. Mark Hoppe said that historically police, fire and EMS typically get newer technology and the first shot at the frequencies. Mark Hoppe suggested that if public works wants frequencies, they go to the county to get concurrence for use. Andy Terry suggested that counties develop a countywide use plan. Perhaps give the county 5 years to develop plan, and submit to the RPC, if not done, those frequencies can then be licensed to any other eligible users. RPC should create a model plan for counties to use and follow.

7. *All members of the working group agreed that the RPC should not develop policies that force an entity to use both 700 MHz and 800 MHz. The "near-far" Nextel problem may make this impossible.*

Should metro expand on 800 system, and the rest be saved for those not on the 800 system? Should NPSPAC frequencies that are not be used now be kept in reserve for expansion of the metro/state system while the 700 frequencies are used by "non-participating" agencies? Mark Hoppe felt there are technical and financial reasons to build a system using one frequency range. A system should be on either 800 or 700, due to coverage issues, antenna systems; etc. Radios that operate on one band will be less expensive than those that operate on both. Our goal should be to facilitate interoperability between 700 & 800. If our goal is to address spectrum management, rather than just the allocation of the 700 MHz band, our goal should be to develop a plan to eventually allocate all the 800 channels to the

metro/state system. Roger Kochevar pointed out that it would take a modification of the NPSPAC plan to do that. Roger Kochevar said that there is discussion taking place about trading channels with the SMRs to get around interference problems, like those being experienced with Nextel. Nextel may need to buy out public safety frequencies and move public safety agencies to another band. Bloomington is looking at this. The FCC would have to change the rules, but they're considering the change because they allowed this problem to happen. We will need to watch this to see what happens.

8. *The channel sort should focus on the metro area and larger cities such as Rochester, St. Cloud, Duluth, Moorhead, Mankato and others. That plan should then drive the allotment in other parts of the state.*

The group felt that this point is non controversial, but will re-word discussion item #8 to reflect county boundaries rather than cities, to be consistent with the sort.

9. *All members of the working group agreed that the sort should be based on portable on the belt coverage.*

The group agreed that we need to evaluate the initial sort results to see how it will address portable on the belt coverage in residential buildings. We should relay our suggestion to NYSTEC for the initial sort.

10. *The RPC may develop ground rules to "shoehorn" low power applicants such as public works, golf courses, and building among high power users on the same channel.*

We need to evaluate this need after the initial sort is complete. Roger Kochevar suggested that we might want to define the users, and needs of the users (for example in building, campus, etc.).

11. *Assigning channels for exclusive low power use may be wasteful in at least the near term because it is expected that radios may be too expensive for unsophisticated users.*

Delete and combine with #11.

12. *The RPC should link 700 MHz allotments to 800 MHz channel licensing. Allot a greater proportion of 700 MHz channels in the metro Collar Counties than in counties already licensed with a substantial number of 800 MHz channels.*

Delete and combine with #7.

13. *The RPC should leave as many channels as possible unassigned to be coordinated on first come-first served basis. There probably will have to be an allotment of channels for the border counties.*

Roger Kochevar thought we should remove 10 channels from the initial sort. Mark Hoppe, I think if we can justify utilization, we should be able to use all that are available. If that means all are allocated, then we need them all. Refer to discussion in #2.

14. *Being able to be used anywhere is a unique advantage of the State channels. It allows them to be used to solve channel shortage problems where not enough channels are available. The State of Minnesota should be allocated channels from the general pool for limited use at specific locations. This will allow valuable state channels to be used in a more advantageous manner.*

There was discussion similar to that in #13. The State has more than 90 channels allocated for statewide use. Everyone agreed these are premium channels and may be valuable for solving border problems. There was discussion about what the state intends to do with all of these channels? Roger Kochevar said they had no immediate plans, but they may be needed to support the rollout of the statewide system. There was also discussion about the use of 10 of the interoperability channels for problem solving. These channels have a restriction that they need to be abandoned if there is a major event requiring them for interoperability. Refer to discussion in #2.

15. *Allot wideband data channels in a manner to encourage a metro-wide community data system.*

Roger Kochevar talked about the preliminary data system design that was expected to piggyback on the metro 800 MHz voice system. Steve Pott said that he remembers the NCC requiring a minimum of one wideband channel be allocated to each County. The group felt that it would be a good idea to encourage participation on a wide area system, but allow a county to have some capacity of their own. One way to encourage participation would be to limit bandwidth to 50 KHz unless you are part of the region wide system. Andy Terry said that we would have to see how the sort comes out, before making any further decisions. Steve Pott suggested that we concentrate on allocation of the voice channels first so licenses can be issued, then work on the allocation of the data channels. There was discussion about the possibility that Hennepin County is interested in building a system on these channels in the near future. We felt that enough work could be done to accommodate that, prior to allocation for the entire metro area.

16. Allot unused interoperability channels for general use.

Roger Kochevar said that these channels could possibly be used for "wild card channels", for problem solving. Also see discussion in #14.

17. A limited number (6) of the frequency pairs should be dedicated as radio-to-radio channels. Both sides of the pair should be able to be used for mobile or portable operation only.

Roger Kochevar mentioned the trouble that we had with this on the 800 MHz system, so he thought we should consider it as we develop the plan. Steve Pott was concerned that we used perfectly good 800 MHz channels for 'scene of action channels', and precluded them for use system-wide. We will need to wait for the sort to discuss this further.

The next work group meeting on November 14th, at 10 am at the Kelly Inn, 10th floor.

The following work group meeting is on December 12th at 10 am at the Kelly Inn,

The next RPC meeting is scheduled for January 9th at 10:00am using the Mn/DOT videoconferencing system. The "base" location of the meeting will be announced in the future.

Adjourned 1:20 pm

Region 22 700 MHz Planning Meeting

Meeting Minutes of 1-9-02

Secretary arrived late 1040 hours

In attendance: John Gunderson - Hennepin Co Parks, King Fung – Hennepin County, Steve Pott – Washington County, Andy Terry – Mn/DOT, Roger Kochevar – Mn/DOT, Michelle Tuchner – State Patrol, Mark Hoppe -

Discussed the difficulty we have had in getting a quorum. A change in the by-laws is required if we want to re-define a quorum. With the exception of the first couple meetings, we have not had a quorum. The issue will be on the next meeting agenda, and we will consider changing it, if we have a quorum. There was discussion about ways to draw more people to the meetings. Better advertising and changing the day of the meeting will be considered.

Another option discussed was to mail the draft plan when it nears completion and provide time for input. The final plan would require approval, in person, based on the current by-laws.

Those present felt that changing the meetings from the second Wednesday to the second Tuesday would not present conflicts.

Pott explained that a working group has been meeting on the second Wednesday of every month to develop discussion points for this meeting. Anyone interested is welcome to attend. The meetings are held at the Kelly Inn at 10:00 am.

Roger Kochevar handed out a letter to vendors, asking for information about their interest or commitment to developing equipment that operates on 700 and/or 800 MHz. We also want to know if their systems will operate on 12.5 or 25 KHz bandwidth, so we can make decisions about the most efficient use of the channels, especially in the metro area. The group agreed that the letter should be sent out to provide the committee with more information.

Roger Kochevar led discussion about modifications to the sort. NYPSTEC will be performing the original sort using 25 KHz. Discussed distributing the letters to vendors. Deanna @ MN DOT will send letters out, all responses will come to e-mail to Pott, and Hoppe can field questions.

Roger developed a draft design for letterhead. Some minor changes were made and the letterhead will be used until a quorum can formally accept.

Pott asked about the importance of developing a website? There has been discussion in the past about pros and cons of approaching Mn/DOT or the Metro Radio Board. One suggestion was to talk to APCO. The primary purpose would be to make the information accessible to everyone. More discussion when we

have a quorum. Roger Kochevar reported that the sort process is underway. He has spoken with David Funk, and found they are still negotiating a contract with NYSTEC. When approved, the sort will include the whole country. This initial sort will provide a baseline for the regional planning committees to begin their process. We will be able to make modifications to the sort, as long as they don't interfere with surrounding states. We (MN) will have to work with Wisconsin if we deviate from the sort, especially near the highly populated counties of the Minnesota metro area. Training for the NIJ database will also be provided sometime this year.

Roger Kochevar explained that the initial sort parameters would use 25 kHz channels (4 adjacent 6.25 channels for a total of 25 KHz), which will result in 154 channels for allotment. They will also use projected 2010 population data. Based on the experience with the 800 MHz channels, Roger thinks the channels can be reused in 55-65 miles. The interference criteria for 700 channels will be more conservative than it was for 800 channels.

Roger distributed a document showing an initial analysis he had performed using some of the criteria described above. There was discussion about the intent to designate 3 of the 4 channels in a group to voice and the other to data. We will need to wait for the initial sort before that can be addressed.

NYSTEC is sorting by county. Rather than assign to the counties to distribute, maybe consideration should be given to allocating by PSAP. This will allow more flexibility for a PSAP if they have plans that are incompatible with a County. This idea was proposed by Pott, but needs to be discussed further.

Roger feels meeting the needs of the metro and collar counties are critical to this plan. The greater MN area will likely have more than they need, and have used very few of the 800 channels. Pott felt that we should also try to develop a way to identify need, not just automatically give the channels to the PSAPS. Do the agencies that are/will be using the metro system need as many voice channels as those who may build other systems? Hoppe asked if there should be a hierarchy of who gets first priority for channels. Kochevar we're trying to organize our comments, and we've come up with these discussion issues.

Andy Terry asked if we are going to list all of our ideas and thoughts and then write all of them into a plan and then ask for everyone to comment on them, or are we going to work through our ideas, and then submit our final ideas in a plan for comment. Pott said that we should submit our final ideas in a plan, along with any unresolved issues. Everyone has an opportunity to participate now, and it will be impossible/impractical to rehash all of the ideas and issues by mail.

Roger handed out Discussion Issues from the last meeting in Oct; we need to list which ones need a decision. And then are there some questions/issues that once determined will drive another issue. We need to whittle away at this and incorporate what's applicable into the plan.

King Fung said that we need to discuss these issues with more people, particularly those on the SMG. Pott agrees. An attempt will be made to change the meeting date and/or time to allow more participation by those involved in the

Metro system planning process. King asked why are we only looking at 800 MHz allocation to help determine needs for 700; why not VHF and UHF? Roger said that UHF and VHF are not planned bands, and cannot be tied together. Andy Terry said that we also need to consider the turn back channels.

The next meeting will be held on Wednesday April 10.

Meeting ended at 12:55 pm.

Region 22 700 MHz Planning Meeting
St. Cloud MN DOT Building

Meeting Minutes of 4-10-02

Attendees:

Steve Pott, Washington County, Andrew Terry, Mn/DOT, Mike Kahl, Granite Electronics, Rolly Helgeson, Wright County, Roger Kochevar, Mn/DOT, Mark Hoppe, Blue Wing Communications, Ron Whitehead, Bloomington, Dave Pagel, Mn/DOT, Greg Coleman, M/A-Com, Jerry Huettl, Mankato P.D., Kathy Karels, Mn/DOT, Jeff Nelson, PSC Consulting, Tom Hannen, City of St. Cloud, Mike Olson, City of Minnetonka, Rich Swanson, Eagan, Greg Anderson, Moorhead P.D.

The meeting began about 15 minutes late due to difficulty with set-up of the videoconference system, once the system was linked to remote sites the meeting began. (The link to the DOT Waters Edge Building was not re-established).

Steve asked for introductions from participants.

Agenda Item # 1: Meeting times / Definition of Quorum

Steve Pott reviewed the by-laws regarding terms for a quorum and noted that a quorum was present (the first time within one year)

In light of the difficulty obtaining participation to the level needed to have a quorum present on a regular basis, the group reviewed the by-laws definition of a quorum. The group-discussed modification of the definition and also the possible changes in meeting dates to reduce conflicts with established Metro area 800 MHz meetings, thereby allowing more participants to attend.

Motion was made by Jerry Huettl to move meeting date to second Tuesday of the month, second by Andy Terry, voted unanimously, will be effective in July.

Discussion on the make-up of the quorum. Jerry Huettl made motion; to reduce number of participants to 9, second by Andy Terry. Mark Hoppe thought number should stay at 11 for the near term. Further discussion about quorum, quantities, timing and representation. Amendment to the motion was made by Ron Whitehead to appoint Directors positions to boards from different user groups and increase from three to seven representing five service types (must consist of at least three members from different levels of government). Plan to post and elect members in July. Quorum of full group governs over the actions of board alone. Body can over rule action of board; however the board is empowered to act upon issues that have come before the body but was un-actionable due to lack of a quorum. Motion made by Jerry Huettl, second by Andy Terry. Amendment and motion made unanimously. Motioned by Mike Olson to make quorum require to have four board members. Second by Ron Whitehead.

Agenda Item #2) Report of working group.

Work group has held three meeting they have addressed channel allocations, list of issues developed, requested vendor information on product development.

Channel Allocation: Roger Kochevar reviewed work on the channel allocation plan. The Region 22 700 MHz plan due in three years, 1 year elapsed. Frequency allotment is major task. Handout of channel chart. Working Group has come up with a proposed sort and channel plan for discussion and future comparison with NCC guidelines. Current sort is done on 25 KHz channel assignments. Working group developed criteria for sort (250 KHz separation, geographic separation, boundary dBu contour restrictions, etc). Discussion of coordination process and county boundaries and dBu contour requirements. Open issues on areas of the state who also have similar channel allotment plans developed. Discussion issues review: Roger advised people to review and comment. Input is welcome. These issues will be addressed in the plan with a desire to get consensus in the plan. To stay consistent with quarterly meetings, the work group will change meeting dates to Tuesday s.

Agenda Item # 3: Kick-off of plan documentation:

Roger reviewed NCC guidance on plan content and plan development. Documentation of process and participation of board encouraged. Steve asked for volunteers to take different sections of the Business plan and develop drafts for discussion, possible electronic distribution and comment. Andy will start draft and distribute to group as a starting point.

Agenda Item #4: Review of vendor feedback.

Steve reviewed what we asked to vendors (Narrowband vs. Wideband, 700 MHz and 800 MHz capable). Jeff Nelson, reviewed the response from M/A Com. Mark H reviewed the Motorola, Thales Communication, Daniel's Electronic, and Simoco response.

Other Business.

Greg Anderson asked about discussion of issue #5. The issue of licensing 700 MHz channels only when NPSPAC channels are licensed. Will this impact wideband data spectrum? Steve responded that our focus has been on voice channels and not on the data piece. Jeff Nelson suggested that issue items may take significant time and is comfortable with the technical process of sort. There seems to still be much work on the policy pieces. Mark suggested that there are probably three big issues (12/25, 700/800, definition of allocation).

1. Steve advised that the grant request has been submitted and authorized for use of the one time \$2500 Federal Planning money.
2. Videoconference process and capabilities were reviewed. It was agreed to continue use of video system whenever possible.
3. Volunteers for board
4. Motion to approve letterhead approved.

Region 22 700 MHz Planning Meeting
Kelly Inn, St. Paul

Meeting Minutes of 7-9-02

Meeting called to order at 1005 hrs.
Minutes reviewed.

Pott, summarized last mtgs. minutes.

Attendees:

Steve Pott, Washington County, Ron Whitehead, Bloomington PD, Bob Schnese, Motorola, Dick Hoffman, Motorola. Dave Eischens, Motorola, Jeff Nelson PSC Consulting, Roger Kochevar, Mn/DOT, Andy Terry, Mn/DOT, John Gunderson Hennepin County Parks, King Fung, Hennepin County, Greg Coleman M/A - Com.

Pott: Treasurer's report \$2500, from NPSTC, deposited at Wash Co. Could be used for future training.

Pott: discussed board positions becoming available, moving from 3 to 7 members. Oct 8th 10am next meeting. Keep the meeting the same despite conflict with IACP Mtg. in Oct. No quorum today.

Andy will schedule video conference for next meeting. Steve Pott will get agenda out early.

Roger: Working group notes. Working on channel allotment statewide, by criteria based on 2010 population projections. It's assuming flat terrain. Mentioned issues that came up at last working group meeting. Since this last meeting, we've proof read the allotments. Went through to make sure we have no violation of our ground rules.

Roger gave a handout, with 4 documents: 1) assumptions and criteria (ground rules for the allotment) 2) ID of the channels, by FCC, the groups we've assigned and the allotment of the counties. Using this to keep track of our sorts. 3) MAP Group allotment 4) FCC channel grouping of base channels. (Each channel is 6.25 kHz and aggregates up to 25 kHz)

Roger described/explained document #4. 32 interop channels, Started allotment in metro based on 2010 populations' standards. Every county statewide we were able to allot 2 groups. (see assumptions and criteria handout)

Whitehead asked about Wright County says state B, what is this? Roger explained that they couldn't entirely allot according to rules, there so they gave Wright County a state allotted channel, hence state B.

Roger explained that the reuse distance was every 50 miles. Most will put the tower in the middle of their county. Roger explained that if you want in building coverage instead of centering your tower in your county, you could put on your county line and use a directional antenna. Need 55 DBU signal strength for in

building coverage. Or put tower at county seat and you would then have 55 DBU at the county seat where most of your in building coverage is needed. Roger gave additional handouts of 800 MHz coverage pattern for WCAL & coverage pattern for Freeborn site.

Jeff - PSC Consulting comment that the ground elevations at WCAL and Freeborn are similar, asked if Roger has looked at an area like Duluth where the ground elevations vary substantially. Roger no, not for 700 we did for 800 though. Bottom line is that situation could come up here. The applicant needs to design his system for this.

Andy commented that how stringent (tight) you are with your frequency allocation, it will have a direct impact on how you design your system.

Jeff- discussed previous conversations about allocation in areas of lakes (Wisconsin) he asks should we propose something to WI? Roger says we really haven't run into any problems with this yet but could do this.

Roger gave an example of the second arrow on criteria handout: What if a county like Itasca needs more than 2 channels?

Whitehead concerned about making counties follow this criteria listed, will it discourage counties from using the 700 channels.

Pott asked what difference will it make if we force them to use the 800 before the 700 channels,, there are still some channels left unused.

Gunderson comments metro congested and lack of spectrum, greater MN has more than they will ever need.

Roger talked about the criteria listed below arrow (bullet) #2. Discussion ensued about the need for this criteria in greater MN. Roger described that these were the ground rules, and necessary to provide some control over this. In 2010, the reserved spectrum will become available.

Gunderson asked are we trying to encourage them to use 800? Roger yes.

Pott asked why are we trying to encourage them to use specifically 700 or 800 MHz, what difference does it make. Andy Terry commented on how we as Public Safety keeps going to the FCC asking for more spectrum, given 800 went back asked for more, given 700, and now went back asking for more. So I think what Roger means is that we need to manage our spectrum, otherwise we look irresponsible in mgmt.

Discussion, Again it's a metro vs. greater MN thing. Metro we will never have enough, Greater MN will always have more than they need.

Andy asks: Is there a restriction on doing a full allocation like Pott says? Long discussion about Pott's view of allocation method vs. Roger's. All have to meet the criteria. One of the criteria is that it has to meet the criteria on this group's plan. Roger says that everyone gets the basic assignments, and then there is an additional pool to draw from for those who are looking for more channels.

The General group allotment (map) allows for the big coverage patterns/assignments (handouts on WCAL and Freeborn Co), then after that users can use directional antennas to meet their other coverage needs.

Roger NIJ, first group will be going to Denver to look at the database and the sort, in Sept. When we get the first sort, we can go from there. Andy asked if they do this first sort based on criteria we provided? Roger says no, they do a sort that does not include this criteria. The training is on the database, it will allow you to put in place holders for the channels you select so other regions can look at what you select. Also some additional tools to do sorting. Roger suggests we wait until we get this first sort, before we move forward. This would be in time for our Oct meeting. Andy: Is the person who is attending going to have a role in frequency coordination? Roger: well this person would be involved in the development of the plan. Andy we need to identify if we are going to send someone and who is going to go. Pott do we agree that Sept is the time to go? Roger says the dates are Sept. 24-26th, in Denver. Pott can we get the course content or something. Roger yes, and they will reserve for us. Whitehead, Roger is the obvious choice and maybe someone else to keep him honest (ha, ha). And then maybe Pott, or Andy or someone else. Funk has the agenda, we will get it. Andy will they provide us with the software tool, that we can access? Yes. Roger a lot of it is the mechanics of keeping up the data base. Another aspect of the training is the NPSPAC sort. Pott anything else on the voice Nothing,

Moving to wideband data channel allotment. Roger commented that he doesn't think many are moving on this yet; they are waiting to see what the wide band applications will be. Roger passed out a handout with a rough draft on channel allocation for the metro and surrounding areas. Whitehead comments that he believes a lot of users will snap these up due to their band width. The need is great for mobile data, and many want to improve their through-put. Roger says the coverage patterns are somewhat smaller; you may be able to reuse the channels closer because of this.

Roger doesn't think we will be able to use them for anything other than this. Pott threw out an idea, what if we were to build a metro wide system. Roger you might have a more efficient use of the spectrum.

Pott could we resurrect Ron Vegemast's work and get the info we can from Motorola and see where that takes us.

Roger says Ron's concept was somewhat a square nine dot pattern, with each site approx 6 miles apart. We should look into the greenhouse project down in Florida that Motorola is working on. Roger says that as you get closer to the fringe area of coverage it slows down. Roger says the Troopers are getting a lot better coverage than we originally predicted. Roger pointed out on the green house test the coverage isn't as good on the wide band as it is on the 800 narrow band.

Potential for a shared regional plan exists and should be given some thought.

Jeff, demand for the data channels is more intense than for voice channels. I think most of the data systems in place, are getting due for replacement and this is probably a more urgent issue than the voice channels.

Discussion ensued about owning own system vs. using (leasing) another's system (CDPD). Costs, advantages, and disadvantages associated with each.

Roger options on what to do with these channels and how to allot. Pott against leaving them in a pool for those who want and draw as needed. Gives the preference to those who have the money to build them out now.

Pott and Roger only two at last working group meeting. Pott asking if anyone wants to assist in writing the plan. Roger taking technical sections, Pott, the other side.

The NCC has an entire plan, to be view via net, Whitehead asked about accessing, offered to help if necessary.

Discussed getting video conferencing and out state meeting for future meetings. We were able at last meeting to get a quorum together to change the by-laws. Encouraged others to attend, and consider board positions.

No further business adjourned at 1230.hrs.

Region 22 700 MHz Planning Meeting
Kelly Inn, St. Paul

Meeting Minutes of 10-8-02

Attendees: Len Koehnen, LJK consulting, Steve Pott, Andy Terry, Roger Kochevar, Michele Tuchner, King Fung, Hennepin County, Mark Hoppe, Greg Coleman Ma/COM, Dan Nohr, Motorola. Robert Schnese, Motorola

1010 hrs, called for members at other sites, none responded. No quorum (need nine). Roger gave bills (for payment) to Pott.

Andy Terry called to Rochester Site, to have someone check video conference link. 1020 appears system working (Rochester Mn/DOT employee in room)

Unofficially called meeting to order.

Review minutes from last meeting. If no questions, we will move on. Can't approve minutes.

Election of officer's discussion (Ron Whitehead offered to serve as an officer). (Not present, at IACP).

Discussed by-laws, board is 7, and 9 needed for a quorum. 4 board members, are a quorum, or 9 members (currently only have 3 board members). Quorum of 9 has precedence over board members.

Can consultants serve on board? Discussed original by-laws.

Pott and Kochevar attended meeting in Denver. Discussed other ways to advertise this meeting.

Discussion about the NLETC training, learning about CAPRAD, database used to track frequency allocations. Pott found the training very helpful. CAPRAD will generate good reports. Hoppe asked if it will be based on geographical, Pott said it will be based on population, terrain, etc.

Learned some interesting responsibilities the state took on by licensing the frequencies... the state has 96 12.5 KHz channels. Up to each state to sort and assign so they can coordinate with adjacent states. The State will look at this in the next couple weeks. There are currently a couple of different approaches - the Missouri plan, (cellular approach) the New York plan, based on terrain, we have a plan for extending 800 out-state, and we've id'd tower sites, were thinking that if we expanded the 800 plan in the metro, were short of frequencies in collar counties. Thinking of augmenting the 800 with 700 channels.

Hoppe asked if Motorola system smart enough to know what to assign? Roger says yes, but you need a control channel.

System is funded by NPSTC, everyone will be able to use database at some level. CAPRAD has two basic functions – planning and managing applications.